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THE

ONTARIO WATER RESOURCES

COMMISSION

WATER QUALITY SURVEY

TOWNSHIP OF GOSFIELD SOUTH

COUNTY OF ESSEX

TOWNSHIP OF GOSFIELD SOUTH 1964

COUNTY OF ESSEX

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Report on water quality survey,
township of Gosfield South,
county of Essex.

80761

Report on

WATER QUALITY SURVEY

TOWNSHIP OF GOSFIELD SOUTH

County of Essex

September 1964

The Division of Sanitary Engineering

INTRODUCTION

At the request of Mr. J. R. Barr, a water quality survey of Wigle Creek was made on July 9, 21 and 22, 1964, to ascertain the present condition of the water in Wigle Creek.

GENERAL

Measures toward pollution abatement in the drains and water-courses in the Town of Kingsville, include the treatment of sewage in a stabilization pond to be constructed in the Township of Gosfield South.

It is expected that the stabilization pond will be situated approximately midway between Highways 18 and 18A, and east of Wigle Creek. The treated effluent of the stabilization pond will discharge to Wigle Creek.

Concern has been expressed by farmers living along Wigle Creek, and by residents on Cedar Island, as to the possible effects of the pond's treated effluent on the water quality of Wigle Creek.

Much of Cedar Island was developed prior to any legislation on minimum lot sizes, consequently many of the lots are quite small and there is not adequate area for septic tank and tile bed installation to treat the waste from the cottages.

Drinking water on Cedar Island is obtained from driven sand points, in many instances, located in close proximity to septic tanks.

Cedar Island is situated at the mouths of Cedar and Wigle Creeks and is approximately 15 acres in area. It is estimated that there are 175 dwelling units on Cedar Island.

Wigle Creek is used mainly for recreation and stock watering.

The head waters of Wigle Creek receive the effluents from septic tanks particularly along the Second Concession Drain, which has a far worse effect on Wigle Creek than an effluent from a stabilization lagoon would have.

OWRC OBJECTIVE

In order to interpret the laboratory analyses of samples the OWRC suggested standards are given. The objective for a clean stream is a maximum 5-Day Biochemical Oxygen Demand (BOD) of 4 parts per million. Storm sewer and water pollution control plant effluents should not exceed 15 ppm BOD. It is suggested that a coliform count in excess of 24,000 per 100 ml in a stream is indicative of pollution. The presence of anionic detergents is often related to sanitary sewage.

The sampling points are designated by mileage points which are indicated on an accompanying map of the watershed area.

The results of analyses of the stream samples are tabulated in Table I of this report.

SIGNIFICANCE OF ANALYSES OF SAMPLES COLLECTED

Second Concession Drain

A drain on the north side of the Second Concession was receiving the wastes from several homes and properties situated north and south of the road.

Most of the tile outfalls could be detected by their odours and the black septic condition of the pools of liquid in their vicinity.

Sample W 4.10D which indicated a 5-Day BOD of 65 ppm, a coliform count of 9,900,000 per 100 ml and an anionic detergent content as ABS of 15.0 ppm is representative of the general condition of this drain.

The Second Concession Drain outfalls to the middle branch of Wigle Creek.

There was no flow at the head of Wigle Creek, the creek here consisting of a series of ponds.

The polluted condition of the Second Concession Drain was brought to the attention of the Metro Windsor-Essex County Health Unit.

West Branch Wigle Creek

A sample (W 3.75) taken at the intersection of the west branch of Wigle Creek and the Second Concession indicated a 5-Day BOD of 6.8 ppm, a coliform count of 80,000 per 100 ml and an anionic detergent content as ABS of 2.3 ppm.

These results are in keeping with the results one would expect when domestic wastes are being discharged to a watercourse.

Second Concession to Highway 18A

From the Second Concession to Highway 18A Wigle Creek traverses agricultural land with the farm houses situated quite a distance from the creek, and no evidence of domestic wastes gaining access to the watercourse in this area was evident.

Cedar Island

Seven samples (W 0.00 to W 0.41) were obtained from Wigle Creek in the vicinity of Cedar Island. All of these samples with 5-Day BOD's, coliform counts, ranging from 4.0 to 15.0 ppm and 280 to 7,000 per 100 ml respectively, reveal that Wigle Creek is being polluted by domestic wastes.

An anionic detergent content was present in all seven samples.

Water samples from residences on Cedar Island, examined for bacteriological quality, returned an evaluation of the water supply from unsatisfactory to satisfactory. Previous sampling surveys indicated that up to 50 per cent of the Cedar Island sand points were delivering water of unsatisfactory to doubtful quality.

The wells on farmland through which Wigle Creek flows, have a varying bacteriological quality also.

SUMMARY

A water quality survey of Wigle Creek was made on July 9, 21 and 22, 1964. This had stemmed from a proposal by the Town of Kingsville to construct a stabilization pond in the Township of Gosfield South, causing concern among some of the people living within the environs of Wigle Creek.

Wigle Creek will receive the pond's treated effluent.

A drain leading to the head waters of Wigle Creek was found to be carrying wastes from homes situated along the Second Concession.

In the Cedar Island area Wigle Creek is receiving pollution in the form of domestic wastes.

Results of bacteriological examination of samples from water supplies on Cedar Island ranged from satisfactory to unsatisfactory.

RECOMMENDATIONS

1. The local authorities should ensure that no residences are discharging raw or partially treated sanitary wastes to any watercourse.

2. Future septic tank systems be installed in accordance with Provincial Standards.

All of which is respectfully submitted,

District Engineer C.E. McIntyre

Approved by K.H. Sharpe, Director.

elb

TABLE I

<u>Location of Sampling Point</u>	<u>Description of Sampling Point</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Anionic Detergents as ABS (ppm)</u>	<u>M.F.Coliiform Count per 100 ml</u>
W 0.00	Wigle Creek prior to junction with Cedar Creek.	4.6	242	37	205	0.1	280
W 0.125	Wigle Creek at bridge Cedar Island.	4.0	308	46	262	0.1	3,400
W 0.212	Wigle Creek opposite Cottage No. 44 on Cedar Island.	7.2	322	58	264	0.1	3,400
W 0.275	Wigle Creek opposite Cottage No. 132 on Cedar Island.	5.0	424	126	298	0.1	1,700
W 0.40	Lagoon (dead end) east of mouth of Wigle Creek.	15.0	434	30	404	0.1	700
W 0.50	East end of dead end lagoon.	6.2	536	66	470	0.1	2,900
W 0.41	Wigle Creek at mouth.	7.6	534	76	458	0.1	7,000
W 0.59	Wigle Creek at Hwy.No. 18A.	7.0	530	72	458	0.1	410

TABLE I CONT'D

<u>Location of Sampling Point</u>	<u>Description of Sampling Point</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Anionic Detergents as ABS (ppm)</u>	<u>M.F.Coliform Count per 100 ml</u>
W 1.62	Wigle Creek at Hwy. No. 18.	2.4	550	39	511	0.1	8,000
W 3.75	Wigle Creek west branch at Concession 2.	6.8	664	94	570	2.3	80,000
W 4.10D	Ditch on north side of Concession 2 opposite G.Gerenoser property.	65	1,284	466	818	15.0	9,900,000